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The claims defining the invention are

1. An optical waveguide structure comprising:  
an optical waveguide having a bend and being  
formed of a photosensitive material; and  
a grating structure arranged to guide light of a  
predetermined wavelength around the bend in the  
waveguide, the grating structure comprising UV-  
induced refractive index variations in the  
waveguide.
- 5 2. An optical waveguide structure as claimed in claim  
1, wherein the grating structure comprises a chirped  
grating.
- 10 3. An optical waveguide structure as claimed in either  
claim 1 or claim 2, wherein the grating structure comprises  
15 a sampled grating.
4. An optical waveguide structure as claimed in any  
one of the preceding claims, wherein the grating structure  
is disposed to guide the light in a reflection mode.
5. An optical waveguide structure as claimed in any  
20 one of the preceding claims, wherein the grating structure  
is disposed to guide the light in a transmission mode.
6. An optical waveguide structure as claimed in any  
one of the preceding claims, wherein the bend comprises a  
25 bend at a branched section of the waveguide.
7. An optical waveguide structure as claimed in claim  
1, wherein the grating structure comprises a continuous  
grating.
- 30 8. An optical waveguide structure as claimed in any  
one of the preceding claims, wherein the grating structure  
comprises two gratings which mirror each other.
9. An optical waveguide structure as claimed in any  
one of the preceding claims, wherein the grating structure  
includes regions of constant refractive index which extend  
in a propagation direction of the waveguide.

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10. An optical waveguide structure as claimed in claim 9, wherein the regions extend parallel to the propagation direction.
- 5 11. An optical waveguide structure as claimed in claim 10, wherein the regions extend cylindrically parallel to the propagation direction.
12. An optical waveguide structure as claimed in claim 10, wherein the regions extend ellipsoidally parallel to the propagation direction.
- 10 13. An optical waveguide structure as claimed in any one of the preceding claims, wherein the device further comprises at least one optical reflector disposed in a direction transverse to a propagation direction of the waveguide to aid in guiding the light around the bend.
- 15 14. An optical waveguide structure as claimed in any one of the preceding claims, wherein the device comprises two or more grating structures angularly disposed with respect to each other to guide the light around a plurality of bends in the waveguide.
- 20 15. An optical waveguide structure as claimed in any one of the preceding claims, wherein each grating structure is formed by UV-holography.
16. An optical waveguide structure as claimed in any one of the preceding claims, wherein the waveguide structure is a sensor further comprising means for measuring an intensity of the light at a predetermined point along the waveguide for determining changes in the intensity due to induced changes in confinement conditions of the sensor.
- 25 30 17. A method of adapting a photosensitive waveguide to guide light of a predetermined wavelength around a bend in the waveguide, comprising:  
- using UV light to induce refractive index variations in the waveguide such that at least one grating structure is formed, wherein the grating structure is disposed to guide the light around the bend.